IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Patent Application of	Confirmation No.: 1768
HARRIS et al.	Atty. Ref.: 124-1111
Serial No. 10/529,055	Group: 3662
Filed: March 24, 2005	Examiner: T. Brainard
For: BISTATIC LASER RADAR APPARATUS	

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APPEAL BRIEF

On Appeal From Group Art Unit 3662

Stanley C. Spooner
NIXON & VANDERHYE P.C.
11th Floor, 901 North Glebe Road
Arlington, Virginia 22203
(703) 816-4028
Attorney for Appellant

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November 26, 2007

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

Sir:

I. REAL PARTY IN INTEREST

The real party in interest in the above-identified appeal is QinetiQ Limited by virtue of an assignment of rights from the inventors to QinetiQ Limited recorded March 24, 2005 at Reel 16869, Frame 276.

II. RELATED APPEALS AND INTERFERENCES

There are believed to be no related appeals, interferences or judicial proceedings with respect to the present application, other than the Pre-Appeal Brief Request for Review previously filed in this appeal on August 20, 2007.

III. STATUS OF CLAIMS

Claims 1-16 and 18-21 stand variously rejected in the Final Official Action mailed May 23, 2007. Claim 17 has been cancelled without prejudice. The above rejections of claims 1-16 and 18-21 are hereby appealed.

IV. STATUS OF AMENDMENTS

No further response has been submitted with respect to the Final Official Action in this application other than the filing of a Pre-Appeal Brief Request for Review which decision was mailed September 26, 2007.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Appellants' specification and figures provide an explanation of the claimed invention set out in independent claims 1, 18 and 21, with each claimed structure and interrelationship between structures addressed as to its location in the specification and in the figures.

1. A bistatic laser radar [defined on page 2, lines 3-4 and elsewhere in the specification as filed] device comprising:

a transmit channel [60 shown in figures 4a and 4b and discussed on page 11, lines 14-18 and elsewhere in the specification] for forming a variable focus transmit beam [movement of linear translation stage 66 causes variable focus as

shown in figures 4a and 4b and discussed on page 11, lines 14-21 and elsewhere in the specification], and

a receive channel [62 shown in figures 4a and 4b and discussed on page 11, lines 14-18 and elsewhere in the specification] for forming a variable focus receive beam [movement of linear translation stage 74 causes variable focus as shown in figures 4a and 4b and discussed on page 11, lines 14-21 and elsewhere in the specification], wherein the device is arranged such that all points of focus of the transmit beam and all points of focus of the receive beam fall on a common axis within the operable distance range of the device [varying focus and the angle θ insures the variable focus as on a common axis as shown in figures 4a and 4b and discussed on page 11, lines 23-30 and elsewhere in the specification].

18. A bistatic laser radar [defined on page 2, lines 3-4 and elsewhere in the specification as filed] device comprising:

a transmit channel [60 shown in figures 4a and 4b and discussed on page 11, lines 14-18 and elsewhere in the specification] for forming a variable focus transmit beam [movement of linear translation stage 66 causes variable focus as shown in figures 4a and 4b and discussed on page 11, lines 14-21 and elsewhere in the specification], and

a receive channel [62 shown in figures 4a and 4b and discussed on page 11, lines 14-18 and elsewhere in the specification] for forming a variable focus receive

beam [movement of linear translation stage 74 causes variable focus as shown in figures 4a and 4b and discussed on page 11, lines 14-21 and elsewhere in the specification], wherein the device is arranged such that all points of focus of the transmit beam and all points of focus of the receive beam fall on a common axis within the operable distance range of the device [varying focus and the angle θ insures the variable focus as on a common axis as shown in figures 4a and 4b and discussed on page 11, lines 23-30 and elsewhere in the specification], wherein each of said channels vary focus by movement along a movement axis and said movement axes are not parallel [movement axes having relative angle θ are shown in figures 4a and 4b and discussed on page 11, lines 23-30 and elsewhere in the specification].

21. A bistatic laser radar [defined on page 2, lines 3-4 and elsewhere in the specification as filed] device comprising:

a transmit channel [60 shown in figures 4a and 4b and discussed on page 11, lines 14-18 and elsewhere in the specification] for forming a variable focus transmit beam [movement of linear translation stage 66 causes variable focus as shown in figures 4a and 4b and discussed on page 11, lines 14-21 and elsewhere in the specification], and

a receive channel [62 shown in figures 4a and 4b and discussed on page 11, lines 14-18 and elsewhere in the specification] for forming a variable focus receive

beam [movement of linear translation stage 74 causes variable focus as shown in figures 4a and 4b and discussed on page 11, lines 14-21 and elsewhere in the specification], wherein the device is arranged such that all points of focus of the transmit beam and all points of focus of the receive beam fall on a common axis within the operable distance range of the device [varying focus and the angle θ insures the variable focus as on a common axis as shown in figures 4a and 4b and discussed on page 11, lines 23-30 and elsewhere in the specification], wherein said channels are separated by a distance S and each of said channels have a lens having a focal length of F and vary focus by movement along a respective movement axis, wherein one of said movement axes define an acute angle θ with respect to the other of said movement axes and wherein $\tan \theta \approx S/F$ [as shown in Figure 3 and discussed on page 9, line 26 to page 10, line 6, page 11, lines 25-30 and elsewhere in the specification].

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1, 2, 6, 18 and 19 stand rejected under 35 USC §103 as unpatentable over Ehbets (U.S. Patent 5,949,531) in view of Zincone (U.S. Patent 4,652,122).

Claims 3-5 stand rejected under 35 USC §103 as unpatentable over the Ehbets/Zincone combination, further in view of Neukermans (U.S. Publication 2002/0164110).

Claims 7-10 stand rejected under 35 USC §103 as unpatentable over the Ehbets/Zincone combination, further in view of Neukermans.

Claim 11 stands rejected under 35 USC §103 as unpatentable over the Ehbets/Zincone/Neukermans combination, further in view of Ortyn (U.S. Publication 2002/0093641).

Claims 12 and 13 stand rejected under 35 USC §103 as unpatentable over the Ehbets/Zincone combination, further in view of Tocker (U.S. Patent 5,280,332).

Claims 14 and 15 stand rejected under 35 USC §103 as unpatentable over the Ehbets/Zincone combination, further in view of Holton (U.S. Publication 2002/0075472).

Claim 16 stands rejected under 35 USC §103 as unpatentable over the Ehbets/Zincone combination, further in view of Evans (U.S. Patent 6,323,941).

Claim 20 stands rejected under 35 USC §103 as unpatentable over the Ehbets/Zincone combination, further in view of Uomori (U.S. Publication 2003/0193658).

Claim 21 stands rejected under 35 USC §103 as unpatentable over the Ehbets/Zincone combination, further in view of Uomori.

VII. ARGUMENT

Appellants' arguments include the fact that the burden is on the Examiner to first and foremost properly construe the language of the claims to determine what structure and/or method steps are covered by that claim. After proper construction of the claim language, the burden is also on the Examiner to demonstrate where a plurality of references (in the case of an obviousness rejection) teaches each of the structures and/or method steps as well as any recited interrelationships in independent claims 1, 18 and 21.

Furthermore, the Court of Appeals for the Federal Circuit has stated in the case of *In re Rouffet*, 47 USPQ2d 1453, 1458 (Fed. Cir. 1998)

> to prevent the use of hindsight based on the invention to defeat patentability of the invention, this court **requires** the examiner to show a **motivation** to combine the references that create the case of obviousness. In other words, the Examiner **must show reasons** that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed. (Emphasis added).

In its recent decision, the U.S. Supreme Court in *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (April 2007), held that it is often necessary for a court to look to interrelated teachings of multiple patents, the effects of demands known to the design community or present in the marketplace and the background knowledge possessed by a person of ordinary skill in the art in order to determine

whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. The Supreme Court held that "[t]o facilitate review, this analysis should be made explicit." *Id.* at 1396.

The Supreme Court in its *KSR* decision went on to say that it followed the Court of Appeals for the Federal Circuit's advice that "rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness" (the Supreme Court quoting from the Court of Appeals for the Federal Circuit in *In re Kahn*, 78 USPQ2d 1329 (Fed. Cir. 2006)).

A. The Examiner appears to ignore the requirements that each independent claim is a "bistatic" laser radar device

Where the preamble of a claim is "'necessary to give life, meaning and vitality' to the claim, then the claim preamble should be construed as if in the balance of the claim." MPEP §2111.02 quoting *Pitney Bowes v. Hewlett-Packard Co.*, 51 USPQ2d 1161, 1165-66 (Fed. Cir. 1999).

The preamble of each of Appellants' independent claims 1, 18 and 21 defines the claimed device as being a "bistatic" laser radar device. The term "bistatic" is defined in Appellants' specification, page 2, lines 3 and 4, as "having separate transmit and receive optics." Thus, the cited prior art must disclose bistatic devices

having separate transmit and receive optics in order to be pertinent to the claimed invention.

While transmit and receive optics are shown in the Ehbets reference, they are not shown in the Zincone reference. In fact, the Zincone reference, in teaching a single "laser airspeed unit 11," (a combined transmit and receive unit) would lead one of ordinary skill in the art away from a bistatic laser radar device and certainly does not address the problem solved by the claimed bistatic invention.

B. The Examiner fails to demonstrate that the cited prior art teaches a "variable focus transmit beam"

The Zincone reference discloses a movable lens 26 which has a variable focus effect but teaches that this is in combination with a monostatic system, i.e., a single transmit/receive optical channel. Ehbets teaches only a fixed and unfocused transmit beam (which is not focused at all, but rather, is emitted through "a collimator objective lens 12 in the direction of the optical axis 13 **as a parallel beam** . . . ." (Column 5, lines 4-7)).

The Examiner admits that "Ehbet does not teach a variable focus transmit beam." (Final Rejection, page 2). As is well known to those skilled in the optical art, a parallel beam is not focused and a collimator lens provides an unfocused parallel beam of light.

Therefore, Zincone is not analogous prior art and Ehbets, not only fails to teach a variable focus transmit beam, leads one of ordinary skill in the art away

from the claimed subject matter by instead teaching a non-variable, non-focused, fixed parallel beam of light.

C. The prior art fails to disclose a "variable focus receive beam"

Zincone would appear to teach a variable focus lens on a monostatic laser system in which there is only a single transmit/receive optical path, thereby teaching away from application to a bistatic laser system.

Ehbets fails to teach the claimed "receive channel for forming a variable focus receive beam." While the position of the Ehbets receive sensor is moved **transversely** to the optical axis, there is no movement along an optical axis which could variably focus the received beam.

As a result, Zincone is non-analogous monostatic art and Ehbets, in teaching a fixed focus optical path in a bistatic device, teaches away from the claimed variable focus receive channel.

D. No prior art reference teaches the claimed interrelationship in a bistatic lidar that "all points of focus of the transmit beam and all points of focus of the receive beam fall on a common axis within the operable distance range of the device"

All of Appellants' independent claims require that the points of focus of both the transmit and receive beams fall "on a common axis." Zincone, which at best teaches a non-analogous monostatic laser system, utilizes a single transmit

and receive optical system and therefore all points of focus may be coincident. However, because Zincone relate to a monostatic system rather than Applicants' claimed bistatic system, it does not provide the benefits of a bistatic laser radar or even suggest the problems of a bistatic radar which are solved by the present invention.

Ehbets, in teaching a non-focused transmit beam (i.e., a fixed and unfocused collimated beam) and a fixed focus receive channel, cannot meet the requirement that all points of focus of the transmit beam and receive beam fall on a "common axis."

Clearly no prior art suggests a bistatic system in which the points of focus fall on a "common axis."

E. The Examiner fails to appreciate that neither Ehbets nor Zincone teach the claimed subject matter

Even if Ehbets and Zincone were combined, the Examiner would have to pick and chose elements from the Ehbets and Zincone references and then combine them as taught only by Appellant's claims.

Assuming one of ordinary skill in the art would utilize the Ehbets bistatic arrangement, one would disregard the inconsistent Zincone monostatic system. However, that person would have to use the Zincone variable focus transmit channel instead of the fixed and unfocused transmit channel as taught in Ehbets. Additionally, the person of ordinary skill would have to pick the variable focus

receive channel from Zincone's monostatic system and apply this to the Ehbets bistatic system. The person of ordinary skill would then have to realize that a benefit in having the focus of the two separate transmit and receive channels fall "on a common axis" (as in the non-analogous Zincone system) and then apply that to the fixed and unfocused Ehbet transmit system and the fixed focus receive system.

As can be seen, one would have to pick and choose features of the Ehbets and Zincone references and then combine them only in the manner suggested by Appellants' independent claims 1, 18 and 21. The Examiner has identified no suggestion for such combination anywhere in the Ehbets and Zincone references.

The Examiner has failed to provide any "reason" or "motivation" for picking and choosing elements from the non-analogous monostatic Zincone reference and bistatic Ehbets reference and has failed to provide any motivation for combining these elements in the manner of Appellants' claims.

Accordingly, there is simply no basis for independent claims 1, 18 and 21 being considered obvious in view of the Ehbets/Zincone combination and any further rejection thereunder is respectfully traversed.

F. The Examiner fails to appreciate that both Ehbets and Zincone would lead one of ordinary skill in the art away from Appellants' combination claims

As noted above, the Ehbets reference teaches the use of a fixed, non-focused transmit beam which requires one of ordinary skill to disregard this analogous art teaching. The Examiner provides no reason why one of ordinary skill in the art would ignore this pertinent art and instead substitute a variable focus transmit system from the non-analogous Zincone reference which is a monostatic laser radar device. The Examiner provides no reason or rationale why one of ordinary skill in the art would utilize a variable focus receive channel as taught by Zincone's monostatic laser device and instead substitutes this feature for the fixed focus receive channel in the analogous Ehbets reference.

Moreover, the Examiner completely avoids the fact that in a monostatic laser radar device such as Zincone, all points of focus are on "a common axis" and that, as discussed in Appellants' specification, it is the requirement of bistatic laser radar systems that requires the variable focus. Because both Ehbets and Zincone would clearly lead one of ordinary skill in the art away from Appellants' combination of elements, this is clear evidence of non-obviousness under 35 USC §103.

In view of the above, there is no reason to combine Ehbets and Zincone and indeed each of these references would teach away from the combination thereof. Each of the rejections under 35 USC §103 are in view of a combination of Ehbets

and Zincone and therefore each ground of rejection is respectfully traversed for all of the above reasons.

G. The Examiner fails to establish a *prima facie* case of obviousness of claims 1, 2, 6, 18 and 19 under 35 USC §103 over the Ehbets/Zincone combination

As noted above in section A (herein incorporated by reference), the Examiner appears to have ignored the requirement in the preamble of Appellants' independent claims that the claimed elements are combined so as to provide a "bistatic" laser radar device. The term "bistatic" is defined in Appellants' specification and the Examiner has not indicated that this definition is adverse to the commonly accepted definition of "bistatic." The Examiner has also not indicated that this word is indefinite under 35 USC §112. Accordingly, because the word "bistatic" describes the required interrelationship of the recited elements, it must be given weight as to the description of the combination of elements, i.e., the combination must be a bistatic laser radar device.

The Examiner has failed to identify where either the Ehbets or Zincone references disclose any elements or combination of elements which suggests Appellants' claimed "bistatic laser radar device." The Examiner's admission, noted in section B above (herein incorporated by reference), that "Ehbet does not teach a variable focus transmit beam" (admission on page 2 of the Final Rejection) confirms that Ehbet cannot teach a bistatic laser radar device because it does not have a

variable focus transmit beam. The Zincone reference clearly teaches a monostatic system as opposed to the claimed bistatic system and therefore would lead one of ordinary skill in the art away from the claimed invention.

As noted in section C above (herein incorporated by reference), the Zincone reference only teaches a variable focus lens on a monostatic laser system having only a single transmit/receive optical path, thereby teaching away from Appellants' bistatic laser system. The Ehbets reference fails to teach any receive channel for forming a variable focus receive beam. As noted above, while the position of the Ehbets receive sensor is moved **transversely**, there is no movement **along an optical axis** which is necessary to vary the focus of the received beam. As a result, Zincone is non-analogous monostatic prior art and Ehbets teaches a fixed focus optical path, both of which would lead those of ordinary skill in the art away from the claimed invention.

As noted in section D above (herein incorporated by reference), neither Zincone nor Ehbets disclose transmit and receive beams, each of which have a variable focus and fall "on a common axis." Where or how the Examiner believes this claimed interrelationship is obvious in view of two references that do not disclose the subject matter is not seen. Absent the revealation of such disclosure in at least one of the cited prior art references, the combination cannot render obvious Appellants' independent claims 1, 18 or 21.

As noted in section E above (herein incorporated by reference), it appears that, even if the Ehbets and Zincone references could be combined, the Examiner would have to pick and choose some elements from the two references, ignore other elements from the two references and then combine the chosen elements in a manner taught only by Appellants' claims. This is not the test of obviousness and it is submitted that one of ordinary skill in the art would not combine these two diverse references in the manner of Appellants' claims to form a bistatic laser radar device.

As noted above, the Examiner has also failed to articulate any "reason" for picking and choosing elements from the two references and then combining them in the manner of Appellants' independent claims 1, 18 and 21. Accordingly, any rejection of claims 1, 18 and 21 or claims dependent thereon fails, as there is no *prima facie* case of obviousness established by the Examiner.

Additionally, as noted in section F above (herein incorporated by reference), each of the Ehbets and Zincone references would lead one of ordinary skill in the art away from Appellants' combination of elements. The Examiner provides no reason or rationale why one of ordinary skill in the art would take the variable focus receive channel as taught by Zincone's monostatic laser device and substitute this feature for the fixed focus receive channel in the Ehbets reference. The Examiner also ignores the fact that in the monostatic laser radar device as disclosed in Zincone, all points are on a common axis and that Appellants' claims require the transmit and receive beams to be on different axes.

In view of the points raised in sections A-F above (all of which have been incorporated by reference), it is clear that the Examiner may have misinterpreted the independent claims 1, 18 and 21. Certainly the Examiner has misapplied the cited prior art references and those references do not teach the structures attributed thereto (as admitted by the Examiner).

Moreover, the Examiner has failed to point out where the interrelationship between the claimed structures is disclosed or obvious in view of the cited prior art, especially since the prior art, even if combined, would not render obvious Appellants' claimed invention.

Finally, as is clear from the above, the Ehbets and Zincone references each by themselves would lead one of ordinary skill in the art away from Appellants' claimed combination, thereby destroying any *prima facie* case of obviousness.

In view of the above, independent claims 1, 18 and 21 and all claims dependent thereon are unobvious over the Ehbets and Zincone combination and any further rejection thereunder is respectfully traversed.

H. The Examiner fails to establish a *prima facie* case of obviousness of claims 3-5 under 35 USC §103 over the Ehbets/Zincone combination, further in view of Neukermans

Inasmuch as claims 3-5 depend from claim 1, the above comments in section G are herein incorporated by reference.

The Examiner fails to allege that Neukermans teaches the elements and/or interrelationship between elements which are missing from the Ehbets and Zincone references. Additionally, the Examiner fails to allege that Neukermans contains any reason for picking and choosing elements from the Ehbets/Zincone combination or the Neukermans reference and then combine those elements in the manner of Appellants' claims 3-5. Accordingly, even the Ehbets/Zincone/Neukermans combination fails to disclose the claimed invention and, as noted above, one of ordinary skill in the art would be lead away from the claimed combination by the Ehbets and Zincone teachings.

As a result, there is no *prima facie* case of obviousness for claims 3-5 over the Ehbets/Zincone/Neukermans combination and any further rejection thereunder is respectfully traversed.

I. The Examiner fails to establish a *prima facie* case of obviousness of claims 7-10 under 35 USC §103 over the Ehbets/Zincone combination, further in view of Neukermans

Inasmuch as claims 7-10 depend from claim 1, the above comments in section G are herein incorporated by reference.

The Examiner fails to allege that Neukermans teaches the missing elements and/or missing interrelationship between elements which are absent from the Ehbets and Zincone references. Additionally, the Examiner fails to allege that Neukermans contains any reason for picking and choosing elements from the Ehbets/Zincone

combination or the Neukermans reference and then combine those elements in the manner of Appellants' claims 7-10. Accordingly, even the Ehbets/Zincone/ Neukermans combination fails to disclose the claimed invention and, as noted above, one of ordinary skill in the art would be lead away from the claimed combination by the Ehbets and Zincone teachings.

Accordingly, there is no *prima facie* case of obviousness for claims 7-10 over the Ehbets/Zincone/Neukermans combination and any further rejection thereunder is respectfully traversed.

J. The Examiner fails to establish a *prima facie* case of obviousness of claim 11 under 35 USC §103 over the Ehbets/Zincone combination, further in view of Ortyn

Inasmuch as claim 11 ultimately depends from claim 1, the above comments in section G are herein incorporated by reference.

The Examiner fails to allege that Ortyn teaches the missing elements and/or missing interrelationship between elements which are absent from the Ehbets and Zincone references. Additionally, the Examiner fails to allege that Ortyn contains any reason for picking and choosing elements from the Ehbets/Zincone combination or the Ortyn reference and then combine those elements in the manner of Appellants' claim 11. Accordingly, even the Ehbets/Zincone/Ortyn combination fails to disclose the claimed invention and, as noted above, one of ordinary skill in the art would be lead away from the claim combination by the Ehbets and Zincone teachings.

Accordingly, there is no *prima facie* case of obviousness for claim 11 over the Ehbets/Zincone/Ortyn combination and any further rejection thereunder is respectfully traversed.

K. The Examiner fails to establish a *prima facie* case of obviousness of claims 12 and 13 under 35 USC §103 over the Ehbets/Zincone combination, further in view of Tocker

Inasmuch as claims 12 and 13 depend from claim 1, the above comments in section G are herein incorporated by reference.

The Examiner fails to allege that Tocker teaches the missing elements and/or missing interrelationship between elements which are absent from the Ehbets and Zincone references. Additionally, the Examiner fails to allege that Tocker contains any reason for picking and choosing elements from the Ehbets/Zincone combination or the Tocker reference and then combine those elements in the manner of Appellants' claims 12 and 13. Accordingly, even the Ehbets/Zincone/Tocher combination fails to disclose the claimed invention and, as noted above, one of ordinary skill in the art would be lead away from the claim combination by the Ehbets and Zincone teachings.

Accordingly, there is no *prima facie* case of obviousness for claims 12 and 13 over the Ehbets/Zincone/Tocker combination and any further rejection thereunder is respectfully traversed.

L. The Examiner fails to establish a *prima facie* case of obviousness of claims 14 and 15 under 35 USC §103 over the Ehbets/Zincone combination, further in view of Holton

Inasmuch as claims 14 and 15 depend from claim 1, the above comments in section G are herein incorporated by reference.

The Examiner fails to allege that Holton teaches the missing elements and/or missing interrelationship between elements which are absent from the Ehbets and Zincone references. Additionally, the Examiner fails to allege that Holton contains any reason for picking and choosing elements from the Ehbets/Zincone combination or Holton reference and then combine those elements in the manner of Appellants' claims 14 and 15. Accordingly, even the Ehbets/Zincone/Holton combination fails to disclose the claimed invention and, as noted above, one of ordinary skill in the art would be lead away from the claim combination by the Ehbets and Zincone teachings.

Accordingly, there is no *prima facie* case of obviousness for claims 14 and 15 over the Ehbets/Zincone/Holton combination and any further rejection thereunder is respectfully traversed.

M. The Examiner fails to establish a *prima facie* case of obviousness of claim 16 under 35 USC §103 over the Ehbets/Zincone combination, further in view of Evans

Inasmuch as claim 16 depends from claim 1, the above comments in section G are herein incorporated by reference.

The Examiner fails to allege that Evans teaches the missing elements and/or missing interrelationship between elements which are absent from the Ehbets and Zincone references. Additionally, the Examiner fails to allege that Evans contains any reason for picking and choosing elements from the Ehbets/Zincone combination or the Evans reference and then combine those elements in the manner of Appellants' claim 16. Accordingly, even the Ehbets/Zincone/Evans combination fails to disclose the claimed invention and, as noted above, one of ordinary skill in the art would be lead away from the claim combination by the Ehbets and Zincone teachings.

Accordingly, there is no *prima facie* case of obviousness for claim 16 over the Ehbets/Zincone/Evans combination and any further rejection thereunder is respectfully traversed.

N. The Examiner fails to establish a *prima facie* case of obviousness of claim 20 under 35 USC §103 over the Ehbets/Zincone combination, further in view of Uomori

Inasmuch as claim 20 depends from claim 18, the above comments in section G are herein incorporated by reference.

The Examiner fails to allege that Uomori teaches the missing elements and/or missing interrelationship between elements which are absent from the Ehbets and Zincone references. Additionally, the Examiner fails to allege that Uomori contains any reason for picking and choosing elements from the Ehbets/Zincone combination

or the Evans reference and then combine those elements in the manner of Appellants' claim 20. Accordingly, even the Ehbets/Zincone/Uomori combination fails to disclose the claimed invention and, as noted above, one of ordinary skill in the art would be lead away from the claim combination by the Ehbets and Zincone teachings.

Accordingly, there is no *prima facie* case of obviousness for claim 20 over the Ehbets/Zincone/Uomori combination and any further rejection thereunder is respectfully traversed.

O. The Examiner fails to establish a *prima facie* case of obviousness of claim 21 under 35 USC §103 over the Ehbets/Zincone combination, further in view of Uomori

The above comments in subsection G are herein incorporated by reference. The Examiner fails to allege that Uomori teaches the missing elements and/or missing interrelationship between the claim 21 elements which are absent from the Ehbets and Zincone references. Additionally, the Examiner fails to allege that Uomori contains any reason for picking and choosing elements from the Ehbets/Zincone combination or the Uomori reference and then combine those elements in the manner of Appellants' claim 21. Accordingly, even the Ehbets/Zincone/Uomori combination fails to disclose the claimed invention and, as noted above, one of ordinary skill in the art would be lead away from the claim combination by the Ehbets and Zincone teachings.

Accordingly, there is no *prima facie* case of obviousness for independent claim 21 over the Ehbets/Zincone/Uomori combination and any further rejection thereunder is respectfully traversed.

VIII. CONCLUSION

As discussed in detail above, the Zincone reference teaches a monostatic device non-analogous to the claimed bistatic device. Ehbet teaches a bistatic device but with a fixed, unfocussed transmit channel and a fixed focus receive channel. Thus, Zincone teaches away from a bistatic device and Ehbet teaches away from variable focus receive and transmit channels, both of which are required by all independent claims. The invention of independent claims 1, 18 and 21 (and claims dependent thereon) cannot be obvious in view of the various combinations of Zincone and Ehbet and the other cited references. The fact that these references teach away from bistatic lidar devices and variable focus in transmit or receive channels further rebuts any *prima facie* case of obviousness.

As a result of the above, there is simply no support for the rejections of Applicants' independent claim or claims dependent thereon under 35 USC §103. Thus, and in view of the above, the rejection of claims 1-16 and 18-21 under 35 USC §103 is clearly in error and reversal thereof by this Honorable Board is respectfully requested.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: _____

Stanley C. Spooner
Reg. No. 27,393

SCS:kmm
Enclosure

IX. CLAIMS APPENDIX

1. A bistatic laser radar device comprising:

a transmit channel for forming a variable focus transmit beam, and

a receive channel for forming a variable focus receive beam, wherein the device is arranged such that all points of focus of the transmit beam and all points of focus of the receive beam fall on a common axis within the operable distance range of the device.

2. A device according to claim 1 wherein the transmit channel comprises a first optical arrangement configured to form the focused transmit beam and having at least one lens.

3. A device according to claim 2 wherein laser radiation is passed to the first optical arrangement via a transmit optical fibre cable.

4. A device according to claim 3 wherein the focus of the transmit beam is adjustable by variation of the relative position of the first optical arrangement with respect to the exit aperture of the transmit optical fibre cable.

5. A device according to claim 4 wherein the exit aperture is linearly translatable with respect to the first optical arrangement.

6. A device according to claim 1 wherein the receive channel comprises a second optical arrangement configured to form the focused receive beam and having at least one lens.

7. A device according to claim 6 wherein the second optical arrangement is configured to couple received radiation in to a receive optical fibre cable.

8. A device according to claim 7 wherein the focus of the receive beam is adjustable by variation of the relative position of the second optical arrangement with respect to the entry aperture of the receive optical fibre

9. A device according to claim 8 wherein the entry aperture is linearly translatable with respect to the second optical arrangement

10. A device according to claim 9 in which; the exit aperture of the transmit optical fibre is linearly translatable along the optical axis of the first optical arrangement, and the entry aperture of the receive optical fibre is linearly translatable along an axis arranged at a predetermined angle to the optical axis of the second optical arrangement.

11. A device according to claim 10 wherein the predetermined angle is calculated from the inverse tangent of the ratio of the separation of the transmit channel and receive channel to the focal length of the optical arrangement.

12. A device according to claim 1 and further comprising at least one additional receive channel.

13. A device according to claim 12 and comprising at least one additional receive channel to provide at least one additional receive beam, wherein the focus of the at least one additional receive beam is arranged to intersect the focus of the transmit beam within the operable distance range of the device.

14. A device according to claim 1 wherein the device configured to interact with a soft target.

15. A device according to claim 1 wherein the device configured to interact with a distributed target.

16. A device according to claim 1 wherein the transmit beam is formed from radiation having a wavelength in the region of 1.55μm.

18. A bistatic laser radar device comprising:

a transmit channel for forming a variable focus transmit beam, and

a receive channel for forming a variable focus receive beam, wherein the device is arranged such that all points of focus of the transmit beam and all points of focus of the receive beam fall on a common axis within the operable distance range of the device, wherein each of said channels vary focus by movement along a movement axis and said movement axes are not parallel.

19. A device according to claim 18, wherein said movement axes define an acute angle.

20. A device according to claim 19, wherein each of said channels has an optical lens with a focal length F, one of said channels is displaced from the other of said channels by a distance S, said acute angle is θ and θ is defined by the equation: $\tan \theta \approx S/F$.

21. A bistatic laser radar device comprising:

a transmit channel for forming a variable focus transmit beam, and

a receive channel for forming a variable focus receive beam, wherein the device is arranged such that all points of focus of the transmit beam and all points

of focus of the receive beam fall on a common axis within the operable distance range of the device, wherein said channels are separated by a distance S and each of said channels have a lens having a focal length of F and vary focus by movement along a respective movement axis, wherein one of said movement axes define an acute angle θ with respect to the other of said movement axes and wherein $\tan \theta \approx S/F$.

X. EVIDENCE APPENDIX

None.

XI. RELATED PROCEEDINGS APPENDIX

None.